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ABSTRACT

This research paper describes strategies for increasing high school students' motivation in order to increase their academic success. The targeted population consisted of students in biology classes at a small high school in a growing middle-class community in rural Illinois. The problem of motivation was documented using anecdotal records, student grades, and standardized test results. Analysis of probable cause data focused on changing demographics, classrooms becoming overcrowded, and deterioration of family structure. A review of curricular practices revealed an overemphasis on traditional teaching practices that addressed only two of the seven intelligences. Students appeared to have low expectations of school and their academic success. A review of possible solution strategies suggested by the literature, combined with an analysis of the problem setting, resulted in the selection of two major types of intervention: cooperative group work stressing the seven intelligences, and improving student-teacher communication through student journals. The specific intervention strategies created a positive classroom climate in which at-risk students were able to achieve satisfactory grades through increased motivation. Moreover, all students in the targeted classes benefited from the interventions used. Appendices include student and teacher survey data. Contains 54 references. (Author/TD)

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ED 398 002

MOTIVATING AT-RISK STUDENTS

by

Carol S. Hughes

Submitted in partial fulfillment of the requirements for the degree of Master of Arts in Teaching and Leadership

Saint Xavier University & IRI/Skylight

Field-Based Master's Program

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Abstract

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This report described strategies for increasing high school students' motivation in order to increase their academic success. The targeted population consisted of high school students in a growing middle class community located in rural Illinois. The problem of motivation was documented using anecdotal records, past grades and national test results.

Analysis of probable cause data focused on changing demographics, classrooms becoming overcrowded and a deterioration of family structure. A review of curricula practices revealed an overemphasis on traditional teaching practices that address only two of the seven intelligences. Students appeared to have low expectations of school and their academic success.

A review of possible solution strategies suggested by the literature, combined with an analysis of the problem setting, resulted in the selection of two major types of intervention: cooperative group work stressing the seven intelligences; and improving the student-teacher communication through student journals.

The specific intervention strategies created a positive classroom climate in which at-risk students were able to achieve average grades through increased motivation. Moreover, all students in the researcher's classes benefitted from the interventions used.

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Chapter 1

PROBLEM STATEMENT AND CONTEXT

General Statement of Problem

The students of the targeted high school biology classes exhibit a lack of motivation that interferes with their academic success leading them to be labeled "at-risk." Evidence for the existence of this problem includes anecdotal records, past grades, and national test results which indicate that these students are capable of academic achievement.

Immediate Problem Context

Winnebago is a community unit school district (#323) that began fall of 1994 with 1415 students (Strategic,1993). The entire district contains two elementary, one middle and one high school. The target high school had an enrollment of 393 when it opened in fall of this year. The school is 99.5 percent white; only 8.4 percent of the students are identified as low-income. Attendance is 93.3 percent with only .3 percent having chronic truancy problems. The mobility rate is listed at 14.9 percent, an increase of 1.1 percent over the previous year (School Report Card, 1993 & 1994). The strategic planning group expects this number to be increasing consistently for the next ten years (Strategic, 1994).

A high school staff of thirty-six includes the principal, 29 fulltime teachers, and six part-time teachers in areas such as drivers' education and music (J.Langholf, personal interview, October 14, 1994). Support services are provided by a full time special education teacher and

two resource room teachers; one resource room teacher is certified in learning disabilities while the other is working under a title grant with the at- risk students (P. Farb, personal interview, October 17, 1994). The staff averages thirteen years of experience. Seventy-three percent of the teachers have bachelor's degrees, and twenty-six percent have master's degrees. Fourteen percent of the teachers with bachelor's degrees are currently working on master's degrees (School Report Card, 1994).

The science department consists of two full-time and one part-time teacher who is shared with the middle school. Teaching duties follow a natural split between life science (one teacher) and physical science (one and a half teachers). The targeted biology classes are required classes for graduation in order to fulfill the two science credits. Since biology is required, the resource room teacher working with the at-risk students spends a minimum of one period per day each and every day helping students in this area. The resource room teacher supports the supposition that there is a problem with student motivation (personal interview, October, 17, 1994).

Judging by the school report card (1994), there seems to be low parent contact with the high school. Only 37.6 percent of the parents made at least one contact with the teaching staff compared to 93.2 percent for the state average. Furthermore, the office staff (J. Langholf, personal interview, October 20, 1994) felt that these contacts centered on requests for missing work and requests for grade check sheets. The number of contacts is even low compared to the district's average of 74.1 percent having at least one contact.

The Surrounding Community

District #323 is headed by a superintendent and a seven person school board. At present, there are no other paid administrators besides the principals of each of the four buildings. The communities served are Winnebago with a population of 1840, plus Seward with a population of 150; in all, this is a 98.9 square mile area (J. Bevan, personal interview, October 3, 1994). Winnebago itself lies seven miles west of Rockford, the second most populous city in Illinois (Minick, 1994). The district's area begins with a growing industrial corridor on the its eastern border and becomes increasingly rural to the west and south (Bevan).

Winnebago is considered a bedroom community for Rockford. The median effective buying power is $35,749 per family (Sales, 1993). The county is composed of 45 percent blue collar workers and 55 percent white collar workers (Census, 1990). Principal employers according to Rowley, a local historian (personal interview, October 14, 1994), are Sundstrand, Amerock, Woodward Governor, and all levels of government. The county statistics show 35 percent of the population over 18 completing high school, 26 percent completing some college, 11 percent earning a bachelor's degree and 5 percent pursuing higher degrees beyond a bachelor's (Census, 1990). The families that primarily settled the area were from Canada and New England (Winnebago, 1987); probably the British Isles and Germany were the main points of origin. Four churches serve the area; they are all Protestant (Minnick, 1994).

Many groups in the community work to support the schools. The Parent Teacher Organization (PTO) is active for the elementary and middle schools. The largest and most active group is FEE, Foundation for

Educational Excellence; this group raises money and provides grants to all schools yearly. Special interest groups predominate at the high school level; these are Fans' Club, Music Boosters and the local Lions Club. The Bank of Winnebago and the Lions Club both provide scholarship grants to seniors each year (J. Langholf, personal interview, October 14, 1994).

The community is experiencing a period of rapid growth that it did not seem fully prepared for by its past experience. According to census data cited by the village comprehensive plan (1994), the village grew 21 percent in the 1960's and 28 percent in the 1970's. The Illinois Environmental Protection Agency (EPA) placed the village on restrictive status for the next eleven years because the water treatment plant was operating over its capacity. The 1980's provided a false lull; there was only 12 percent growth. As soon as the restriction was lifted in 1991, developers entered the area. Six developments are currently underway plus a seventh is in the planning stage. Projections are always risky, but Minick estimates the population to reach 2800 by the year 2000. Superintendent Bevan (personal interview, October 3, 1994) proposes a more conservative 2600. Obviously, growth and its consequences are coming to the Winnebago district. In such a setting, any problem will also grow. Superintendent Bevan already has noticed a significant growth in the number of at-risk students; hence the creation of the new resource room for at-risk students only two years ago.

The Regional and National Context

The importance of reaching at-risk students represents a challenge to the future according to Jones & Pierce (cited by Costa, Bellanca & Fogarty, 1992). Two arguments stand out in their work: the effect of

demographics, and the growth of an under class, will both create a challenge to society.

The demographic argument focuses on the age shift in the population. When the number of people under 18 was equal to the number over 65, there was a balance in workers. As one person retired, a young person would enter the work place to replace them. As the population ages, the balance is no longer achieved; this creates a shrinking work force. This country is currently competing in world markets; this is hard to do without a pool of skilled workers. The call for such workers has been demanded by those who seek school restructuring (Jones & Pierce cited in Costa et al., 1992).

The fact that schools have problems comes as no surprise. These problems are seen in society as people who are dropouts, illiterate, unskilled and even criminals. The problems are creating a growing underclass in this country at the same time that there is a growing need for skilled workers. The illiterate and unskilled cannot solve the problems that will have great consequences for the economic structure. As the schism between skilled and unskilled, productive and unproductive widens, Jones and Pierce see seeds of political upheaval (cited in Costa et al., 1992). A less optimistic point of view could include a potential for violence and revolution as the underclass grows.

A comprehensive plan was created for the village of Winnebago because the village board realized that growth will bring change; the village needed to plan for the future (1994). The plan focused on how the community can handle that future. With Rockford a mere seven miles to the east, problems that exist there are very likely to spread. Since there is no Hadrian's wall, the community realizes that problems will not stop at

its border. Rockford schools have problems with truancy, dropouts and gangs; these mirror the school problems discussed by Jones and Pierce. One warning signal that these problems are coming appears in the School Report Card. The 1993 truancy rate was zero percent; the 1994 rate was three-tenths of one percent. When one compares these figures, a warning can be seen.

Many authors discuss motivation and the schools. Glasser devoted an entire chapter in 1986 to the roots of motivation, which the author feels lie in meeting peoples' needs. Zink (1983) continues exploring motivation as a key to success. To change behavior according to Zink, one must understand the motivation forces at work within a person.

Curwin (1990) has the most optimistic point of view to deal with problems facing society. The author feels that motivation represents hope and hope is motivation. In order to address both student needs and the needs of the society, schools need to increase refine the instructional strategies that are motivational.

Chapter 2

PROBLEM EVIDENCE AND PROBABLE CAUSE

Problem Evidence

In order to document the problem of student motivation and academic achievement, seven types of materials were used; information was collected from attendance records, California Achievement Tests (CAT's), reading scores, grade point averages (GPA's), previous science grades, teacher surveys, and student surveys. This information was collected for the students that were identified as "at-risk" in the first year biology classes of the teacher-researcher. Unfortunately due to scheduling, one section of the biology classes is being taught by another teacher; that one section contains nine at-risk students. This leaves only eleven at-risk students for the targeted research group, which makes the group much smaller than anticipated.

As table one indicates, the average attendance was higher (95.1%) for the at-risk students compared to the total school population's attendance (93.3%). This finding can be interpreted in several different ways. As mentioned, the targeted group is very small so the results could be misleading due to the size of the group alone. Going beyond statistical questions, however, the students may attend in order to escape from their home situation rather than due to a higher level of motivation. The question of family background as a cause of student problems will be discussed in the second part of this chapter. Fear of failure may cause the students to attend more days. Students do understand early when they are not doing as well as other students. Students may fear that missing more time than is

Table 1

Student Attendance, Achievement, and Reading Ability Data

Student	Number of Days absent	GPA	CAT 7th grade composite score	Reading Level	Previous Science Grade	
					Sem 1	Sem 2
1	60	N/A	6.2	at grade level	F	D-
2	1.5	2.38	3.1	below grade level	B	B*
3	20	1.54	7.2	above grade level	C+	C
4	1.5	2.46	5.8	below grade level	C	B
5	8.5	1.91	10.5	N/A	C-	D+
6	8	.83	N/A	below grade level	D	F
7	17.5	2.36	3.5	N/A	B	A*
8	9	1.91	5.7	below grade level	C	D-
9	3	1.45	N/A	at grade level	D-	D
10	16.5	1.00	N/A	below grade level	F	F
11	4	2.08	3.6	above grade level	B-	C
School Average	11.7	2.00	7.0	at grade level	C	C
Median	8.5	1.91	5.8	below grade level	C	D+

* From self-contained classroom

necessary may put them behind in their work; parents, too, may see good attendance as a way to help their students' grades. Since school work is not easy for the at-risk group, students or their parents could feel that they would have a harder time catching up with any missed work than the average student. In the student survey, half of the students intended to miss days only for illness; the vast majority (86 %) wanted to have good attendance. Looking at the same survey, 23 percent found school boring and 22 percent found their teachers boring. Four out of eleven students (36%) missed 50 percent or more days than the school average. The attendance data may show two trends: students who worry about school attend more, and students who find school boring attend less than the average. Both fear and boredom are emotions that can affect students' motivation. Thirty-six percent of the students missed more time than the median number of days shown on table one.

If the percent of students that are bored is added to the percent that have no specific goal! Although the numbers seem almost too perfect to be specific goal, the total is exactly 36 per cent. Although the numbers seem almost too perfect to be believed, they are very suggestive of underlying problems in motivation.

Table 2

Student Survey Data

Question	Responses and percents			
Wants to do well in school	Strongly agree	Somewhat agree	Seldom agree	Disagree
	66	31	3	0
Doing homework is	Very important	Somewhat important	Seldom important	Never important
	46	48	3	0
Has place to do homework	Always	Most of time	Seldom	Never
	46	40	15	0
Parents feel school important	Very important	Somewhat important	Of little importance	Not important
	88	12	0	0
Classes are usually	Interesting	Somewhat interesting	Somewhat boring	Boring
	16	60	19	4
Goal for this year	Yes	No		
	86	14		
Want to attend school	Everyday unless sick	Often	Seldom	Only if have to
	50	36	9	6
Teachers	Almost always like them	Usually like them	Sometimes like them	Seldom like them
	19	59	22	0
My grade is	Very important	Usually important	Somewhat important	Unimportant
	62	32	6	0
Believe can do well in school	Yes	No		
	100	0		

When looking at grades from the previous year's science class and the GPA's, the at-risk students seem capable of average grades with support.

Since students are able to keep up when receiving at least one period a day of help, the question arises what would happen if this support was not given? The motivation could be coming more from the guidance of teachers than from within the students. To support this argument, notice that the only above average grades were achieved by two students in totally self-contained science classes rather than regular classes. Teachers who work with at-risk students on a regular basis must constantly work to keep hope and motivation alive because at-risk students seem more easily discouraged by all the problems that they face.

The role of parents should not be neglected when looking at the GPA's and previous grades. All of the students surveyed felt that their parents valued school. Children usually reflect parental values. As seen in table two, there is the same very high degree of positive value placed on schools and wanting to do well by the students themselves. One reason that these numbers may reflect parental attitudes more than student motivation is the significant drop, less than half, in those who see homework as very important. If students were internally motivated, it would appear that they would work hard to reach their goals. In fact, the same number who see homework as very important also always have a place to work--less than half. All the students believe that they can do well, but how to reach their goals is not clear to them.

National exams for reading comprehension and achievement indicate that there are problems in academic achievement. This information is hard to collect, however, because the growth and mobility of the targeted area means that many of the student records are spotty. For example, CAT scores were missing from three student's records. The records available from the CAT composite scores show that the student mean was one grade below their actual

grade level by seventh grade. In the target district, as students enter junior high, they change from one teacher for most subjects to seven teachers per day. For students who need lots of support, this type of scheduling could increase academic problems. With so many teachers to deal with, at-risk students could easily feel that the classroom is more impersonal. Each class often brings new names for both teachers and students to learn. In this more anonymous atmosphere, students can have more problems having their need for recognition and worth being met. If CAT exams were given again at the high school level, this hypothesis could be checked; unfortunately the district has discontinued the administration of CAT's at the sophomore high school level.

Although complete information is not available in reading, more than half the students for whom data is available are reading below grade level. Reading is one of the most basic demands made for academic success. The fact that the median score indicates the students are reading well below grade level is the clearest, simplest indicator that academic problems exist; such academic problems can lead to a lack of motivation. If students cannot read the work required in a class, they can develop negative attitudes and lose motivation. By high school age, they may lose any reason for motivation from within because they lack the skills needed to be successful. This view is supported by the median CAT composite scores being one grade below their chronological level.

The teacher survey revealed the nine out of ten students had problems with homework (see appendix B). In fact, almost half the students surveyed thought that homework was only "somewhat important." From personal communication with one of the resource room teachers (P. Farb, August 29,

1995), homework was the problem that occupied most time in the support services. Staying on task seems to be the main area of concern. Many students begin work, but fail to complete it. Papers tend to be put away for later; yet, that later never occurs without help from another person. The The motivation to complete work--and have a goal of completing work--comes from outside the student. The student survey reflected roughly one student in seven having no goal for the year. This is close to the one in six receiving support services.

Three out of ten students have behavior problems according to the teacher survey. Burke (1992) indicated that students are most often behavior problems when their needs are not being met in a traditional classroom. From the year end report (1995), 19 percent of the discipline problems resulted in suspensions at the target high school. The cumulative records for the at-risk students showed two suspensions, 18 percent. This statistic seems to show that at-risk students' behavior follows the general group norms. The student survey, too, shows that all students want to do well school so they try to follow the rules.

Teacher records, surveys and test results show that the targeted students have problems in motivation and academic success. In looking over the data collected, the at-risk students want to do well in school; yet, they seem to not link academic success with their ability to perform the tasks (homework) required of them. They do not seem to set goals clearly. They appear not to be motivated from within. They do not link their actions clearly to success. Since they are teen-agers, an age when peers are more important than parents or adults, they could benefit from seeing other peers working towards goals; they could also benefit from watching others who are motivated from within.

Probable causes

After looking at the data collected from teacher records, surveys and interviews, it appears that a problem in motivation that interferes with student success does exist in the targeted school for students who have been labeled at-risk. This section will try to probe some of the possible underlying causes of the problem. Although the literature surveyed discussed many general causes of student problems in motivation, this section will explore causes specific to the targeted area. For example, Burke (1992) suggests that both bilingual students and changing family structure were causes of problems; in the local context, there are not enough minority students to have a significant effect according to the school report card (1994). On the other hand, the family situation does seem to affect the targeted students.

Socioeconomic problems are frequently cited in the literature as contributing to student problems (Manning, 1993; Payzant & Wolf, 1993; Pigford, 1992; Slavin & Madden, 1989). Families with socioeconomic problems may be drawn to the rural setting of the target community; white flight does extend to the working poor. Farmers provide housing for hired hands; farms have a variety of buildings on the property. Many of the buildings are no longer used by the owners today because they need extensive repairs or remodeling. For example, the buildings often have little insulation and have antiquated wiring; building codes do not affect most unincorporated areas. When one of the buildings rent, the rent is extremely low. These rentals can make daily living the focus of all energy; children from such housing have little reason to be motivated to seek academic success. Daily life can revolve around keeping warm or heating water rather than doing school work. Weathered barn boards are often used for American folk art; yet, there is no

beauty to a child living inside the unpainted, often barely insulated shelter. Although children raised in projects or inner city public housing, are the students usually pictured as having problems caused by socioeconomic hardships, at least those children start out in housing that has modern plumbing and electricity, plus the walls are insulated. Children raised in some rural settings may never enjoy adequate living conditions. With the many horror stories printed in the newspaper about how slow authorities are to intercede in inner city problems, there is a real likelihood that the same authorities are not going to react swiftly when the report requires a drive ten or more miles to see if a home endangers the children living there.

The other aspect of family life that may be an underlying cause of problems is the rate of change occurring in the targeted community. The area is a rapidly expanding housing market (Minick, 1994). The growth has created an area that serves as a bedroom community; as the name implies, the adults work elsewhere, and are at home evenings. Children in such households spend little time and have little contact with the adults who should be role models. Costa, Bellanca and Fogarty (1992) felt that adults are vital role models to children; yet, latch-key children may be deprived of adequate models. Parents who have spent most of their time and energy at work may be modeling goals concerned with money and possessions rather than the importance of school and academic achievement. Nonverbal communication may be more important than all the meaningful, quality time that parents can try to establish. The child who is moved into a bigger, more expensive home sees obtaining possessions as a major motivation in their parents' lives; the child who sees the parent bringing home work every night--or discussing work nightly--will probably feel that a good paying job is a major goal. The same child probably may not realize that schooling made that job possible; the parent or parents may not articulate the connection.

Changing demographics may be a cause of problems in motivation (Means & Knapp, 1991). It is logical to assume that for every child that wants to move, another one does not want to leave the old, familiar area. It is scary to be the new kid on the block. Since adolescence is a time of change to begin with, another change can add stress. Glasser emphasized the need to belong (Gough, 1987). For every child that looks at moving as a challenge, there is probably another one that that can feel overwhelmed by the task of finding new friends and a new group to join. Coping skills can become the first priority. Motivation to do well in school does not appear to be as important as having an individual's needs met.

Many new students means that there is a wider range of student needs. The teachers and school system has to respond to change as well as the students; how the teachers or system respond can solve or cause problems. At present, the public feels that schools are failing and that they are the root of student problems in many, if not most, areas (Levin, 1994). There is a national cry to restructure the schools (Bracey, 1993,; Gallachio, 1993; Levin, 1994). Modern methods need to be implemented to address new needs.

The issue of the teacher's role in school problems may be a two-edged sword. Amspaugh (1993) felt teacher self-esteem is at rock bottom. When teachers feel that they are looked at as the cause of problems, they in turn may not be motivated to try their best. With this public image in mind, teachers may not rise to the challenge to implement new methods for new students with new needs. Programs for at-risk students have been criticized for using outdated methods involving endless drills in basic skills rather than providing new, challenging material (Means & Knapp, 1991). Challenging material can provide students with the motivation to acquire new knowledge and skills. Teachers may fail to see the individual's overall abilities or

the quality of their thinking (Beacham, 1990). Other researchers felt that teachers did not recognize the many forms of intelligences (Armstrong, 1990; Reed & Johnson, 1992). As classrooms grow in size and diversity, teachers will be challenged to recognize individual differences or face increasing blame for student problems, such as problems in motivation or academic success.

Added to local growth and change is a wider change in social and economic structure. Schools need to prepare students for global citizenship (O'Neill, 1993; Wagner, 1993). Preparing for a role in the world means that the individual is faced with balancing their own needs against the demands of society (Morin, 1991). Reconciling needs can cause problems in motivation due to frustration. What an individual will need to know for the future changes every eight to ten years. Profound, ongoing change in the workplace may be the subject for futurists to discuss; but it may represent too many unanswered questions and conflicting demands for students trying to prepare for their role in the future. Redick and Lloyd (1993) felt that planning for the future troubles students. Students work hard to make sense out of their world. Society wants useful members; individual ideas, interest and even needs may be sacrificed to the good of mankind as a whole (Levin, 1994).

One symptom of the need to escape frustration, anxiety, stress, or responsibility may be seen in the use of alcohol and drugs; unfortunately, alcohol and drugs may also cause many new problems. During the summer of 1995, President Clinton made America aware of the growth of smoking in the teen-age population. Cigarettes are addictive and are labeled as drugs. With this broader definition, more students are having problems resulting from drug use. Smoking in the target school, as in many schools, results in a conflict with school rules that leads to detentions and suspensions. The

conflict can worsen a common failing seen in at-risk students, poor attendance (Janko, 1988; Slavin & Madden, 1989). What is the motivation for coming to school when smoking will cause a student to be suspended for ever lengthening periods of time?

Teen-agers can feel disconnected from society in general and feel threatened by authority (Pigford, 1992). A new catchword is to call some people "disenfranchised" (Lamperes, 1994). Glasser felt that the need for power is the core of most school problems (Gough, 1987). Substance abuse may give a temporary illusion of power by minimizing an awareness of problems or drawing attention to negative behavior. Unfortunately, authorities will wield their power as they seek to punish students who abuse alcohol or drugs.

Substance abuse is looked at as a contributing cause of problems seen in at-risk students (Manning, 1993; Roberts, 1993). Taff (1990) specifically labeled drugs as the root cause for establishing the DeLaSalle program for at-risk high school students. Although no one wants to consider drugs in any local context, drugs and alcohol represent a small, but unfortunately tenacious problem, especially in at-risk students, that cannot be ignored. The problem is certainly not going away; in fact, education, not legislation, is looked at as the most effect tool against this particular problem and its effect.

Self-concept is the most frequently cited cause of problems in motivation and academic success (Alderman, 1990; Canfield, 1990; Eschermann, 1988; Gentile & McMillan, 1992; Hunter, 1984; Kaplan, Peck & KAplan, 1994; Marshall, 1989; Redick & Lloyd, 1993; Taff, 1990). At first, the literature was frustrating because many references tied low self-concept to other problems, such as the dysfunctional family, socioeconomic conditions or

substance abuse. Most of the literature, however, preferred to consider low self-concept as a direct cause rather than choosing to make an unproductive search for the cause of a cause. The positive approach resulted in most articles using low self-concept as a cause that needs a solution; a wide range of solutions are possible, as will be discussed in chapter three. How the classroom climate can contribute to success or failure was the focus for many researchers because they were also educators. Schools are looked at as profoundly influencing the development of self-concept for younger children before peers become the center of their world. With the family increasingly relying on, or demanding that schools teach social skills, morals, and values, the role of schools in this development will be growing.

At present, the family, community growth and substance abuse are among the causes of problems in motivation seen in the target population. The school district is just beginning to expand to the point that racial and culture diversity could contribute to problems seen tomorrow. One single cause stands out at present from all the rest: low self-concept. If it is possible to make students feel good about themselves, motivation and academic success should be increased.

Chapter 3

THE SOLUTION STRATEGY

Review of the literature

In order to develop an action plan tailored to the low motivation of at-risk students, a review of the literature was undertaken. Both the Reader's Guide and Educational Research Information Center (ERIC) were searched to provide a balance between general and specific information. From these sources it was possible to sample solutions on how to motivate, plus gain a better understanding of what solutions had been tried in the local setting. An understanding of the local context of the problem permitted eliminating ideas that were already in place, or were inappropriate in this setting. When the sample review was complete, solutions to increase motivation appeared to cover working on three areas: school structure, curricula, and instructional strategies.

Restructuring schools is frequently cited as a solution to many problems discussed in education literature. If schools are not effective then they cannot motivate many students. Since the publication of A Nation at Risk, much of the public's attention has focused on what should be done in American schools (Gough, 1987; O'Neill, 1993). The public opinion is that schools are failing (Levin, 1994). Whether one agrees or disagrees is not as important as the public's perception of the schools; unfortunately a self-fulfilling prophecy appears to be at work. In the local area, the

situation is not helped by the prolonged lawsuit involving the neighboring school district; the lawsuit holds a cloud of negative feelings over the local area.

Restructuring schools has a wide range of meaning that is not clearly defined according to Bracey (1993). Hopefully, one goal will remain clear in this controversy; as stated by Morin (1991), the schools should try, "to provide all students with an environment conducive to student motivation and achievement." (p. 411) In the many articles reviewed, there appears to be an inappropriate emphasis on changing **things** rather than working with students. For example, Wagner (1993) discussed the issue of redesigning the whole system along corporate management lines. Although corporations may be noted for their success in motivating workers, Wagner feels that the using corporate models has gone too far. Unlike factories producing inanimate objects, schools are working with living students as their products. Levin (1994) reminded the researcher to put students in the center of a solution plan; a clear focus is needed.

There are several basic reasons that restructuring schools will not be a part of this action plan. As in Wagner and Levin's work previously mentioned, the student should be the center of any plan; however, restructuring goes beyond the scope of a classroom teacher. Although Boles and Troen (1992) suggested quite the opposite, they spent three years laying the foundation for their restructuring project. This is outside the possible time frame for this action research.

In the local context, the target district is already planning for the future of their schools. A strategic planning group has been formed; the planning group has already developed a mission statement and goals (Strategic, 1994). District-wide curriculum is being written

over a seven year period that began in 1993. The time frame allows each subject area or related subject areas to be focused on for a year. According to Anderson (1993), this is the correct approach to restructuring schools; it is vital to link local efforts to state demands.

When teachers consider how to rewrite the curriculum, they should consider setting their expectations high enough (Angelo, 1993-4; Beacham, 1990; Clifford, 1990; Eschenmann, 1988; Means & Knapp, 1991). Setting goals at an **appropriate** level should motivate students to succeed. If goals are set too high, students who achieve will consider themselves merely lucky if they obtain that goal; they will not link their behavior to success. If success is not linked to a student's behavior, the student will not be motivated to try, because they feel that there is little if any probability of success. On the other hand, if work is too easy, anyone can succeed without effort, so again there is no link between behavior and achievement. "Moderate probability of success is ... essential to intrinsic motivation," according to Clifford (1990, p. 30). Students can learn to associate their efforts with their accomplishments (Manning, 1993). Once they associate behavior and achievement, then they can begin to believe in themselves and want to achieve (Manning, 1993; Sagor, 1991).

One way to improve the curriculum and set higher expectations is through the use of higher order thinking skills (Fogarty & Bellanca, 1993; Morin, 1991). Traditional classrooms emphasize memorizing facts that are covered on multiple choice tests. Teachers have fallen into a rut of covering only one type of thinking. Facts are usually memorized for a test then quickly forgotten. There should be a shift from facts to higher-order thinking skills in order to create lifelong learners. This is the theme developed in the work of Fogarty and Bellanca (1993), which covers ways to instill an emphasis on thinking into the classroom.

Higher-order thinking skills can be used for many problems associated with motivation and academic success. Teachers need to use variety in their classroom; Weaver (1990) feels that variety is one of the best motivators. When many different types of thinking skills are used, variety is achieved. This will also give students the freedom to look at work from many different angles. Freedom should allow the student to explore and discover new meanings in the world around them. Choices are the key to motivating every learner (Pardes, 1994).

Teachers can use two tools when working towards a goal of higher-order thinking skills, metacognition and graphic organizers. Graphic organizers were a large part of Fogarty and Bellanca's work (1993) because graphic organizers offer students the ability to visualize and focus on their own thinking processes. For example, a mind map allows students to share their own insights with others. Insight into thinking processes is one important step in growth. Metacognition, on the other hand, provides time to reflect further on thinking processes (Morin, 1991). Since metacognition can be done in a group or individually, it allows for the development of both intrapersonal and interpersonal intelligences.

The literature offered the most solutions in the area of what teachers can do to help provide for motivation and success because the literature is mainly aimed at educators, of whom teachers are the largest group. There appears to be a maze of ideas; O'Neill (1993) attributed this bewildering variety of ideas to the many, sometimes conflicting demands put on the schools. As the ideas were sampled, general guidelines began to emerge in the search for solutions. The ideas need to be practical and realistic for establishment in a classroom. For example, each student could be provided with their own computer terminal; this could be a dream for the future,

but the target school district is experiencing economic hardships due to a proposed school referendum that failed in April, 1995. In addition, solutions should have a direct effect on the student and be measurable. Many ideas are stated in such a way that **how**, as in how to implement and how to measure the success or failure of implementation, appears to be missing.

Despite the bewildering variety of solutions offered, cooperative learning stands out as the idea that appears most often in the literature. Burke (1992) stated, "cooperative learning helps teachers make learning more meaningful and motivating... ." (p. XV) Added to the six authorities that Burke cited, the value of cooperative learning is also supported by Glasser (1990); Gough (1987); Lamperes (1994); Morin (1991); Redick and Lloyd (1993); Sagor (1991); plus Slavin and Madden (1989). One of the benefits of cooperative learning is that it naturally integrates with several other solutions. For example, cooperative learning can be used with higher order thinking skills, graphic organizers and metacognition, discussed earlier.

Bellanca and Fogarty (1991) believed that social skills are essential to the development of cooperative learning. Social skills are, in fact, another solution to problems in motivation. Inadequate social skills are more often associated with at-risk students due to problems in their family structure (Lamperes, 1994; Manning, 1993). When social skills are developed, they allow students to interact and become part of the group. The classroom takes on more positive associations when students are a part of a group that can support and nurture. Glasser (Gough, 1987) believed that working together helps fulfill a person's needs.

Using heterogeneous grouping adds to the development of social skills (Bellanca & Fogarty, 1991; Gallachio, 1993). Heterogeneous groupings enable students to meet more of their classmates. Due to the way most classes are scheduled at the high school level, students often do not know each other. For example when asked to return graded papers, students will refuse because they do not recognize the names or associate them with the faces of their classmates. It is hard to build toward a positive classroom climate when most of the students are strangers to each other. If students have a chance to work with many different people rather than their smaller circle of friends, their classmates are no longer strangers. The classroom will appear less threatening if students know each other and have worked together to help each other.

Communication is another element of a positive classroom climate (Beacham, 1990; Clifford, 1990; Morin, 1991). The authors emphasized teacher-student communication. When teachers and students communicate, students feel that their ideas are valued. Feeling good about oneself leads to motivation to succeed. As social skills are developed, students also have the opportunity to feel good about how their peers perceive them. Students work cooperatively to fulfill tasks for their groups and are valued for their contributions. As they work together, they support each other both in times of success and in times of failure. Classrooms should provide a place where errors are tolerated because it is hard not to make mistakes as a person learns and grows (Clifford, 1991; Sagor, 1991). At-risk students may need more support as they begin to link their efforts directly to success or failure. At-risk students have a tendency to associate negative feelings with the place, school, rather than realizing that their own behavior can cause them to have problems (Manning, 1993).

Student-teacher communication, as discussed above, was a solution to problems in motivation. Including teacher-parent communication to help with at-risk students' problems was also mentioned by Manning (1993). That only one author in the works sampled would mention communication with the family seems to reflect on how the family is perceived by the writers; since families can cause problems rather than solve them, why should they be involved? The literature sampled did not view parent-teacher communication as effective at the high school level. Another way to look at this could be that the student is responsible for his own learning and motivation (Pardes, 1994). If motivation is accepted as being intrinsic then the focus on the student rather than the family seems logical.

Overall, achievement is tied to self-concept. Many articles discuss the link between poor self-concept, lack of academic success and lack of motivation. Although the obvious solution is to develop a program to foster a positive self-concept, the articles do not offer this as any easy solution. In fact Kaplan, Peck and Kaplan (1994) discussed inconsistent results in programs working on self-concept; their research suggests that there are other variables at work that may modify or mediate such intervention strategies. This is the clearest statement on the issue from the articles sampled. In fact, the articles were not consistent on the terminology or cause. Kaplan et alia believed that self-rejection was the key rather than self-concept. Manning (1993) and Marshall (1989) still addressed the cause as self-concept while Alderman (1990), Canfield (1990), and Taff (1990) preferred to use the term self-esteem. Gentile and McMillan (1992) added to the confusion by using the term self-image. No matter what authors may call the problem, the root of the problem seems to be how students view the world around them and their place in that world.

Since educators and researchers are not clear on the cause, attempting to use self-concept alone as a solution seems, at least, impetuous. One of the moderating variables that muddles the issue may actually be the research methodology. Surveys are a common tool used for examining feelings. If the target population can express their feelings easily and clearly, a survey has more validity. If there is a grain of truth to criticism of education today, students are not able to express themselves clearly or effectively so the research method may be affected.

There are alternate methods suggested for improving low self-esteem. Curwin (1993) suggested altruistic programs outside the classroom. For example, volunteer work or tutoring inside or outside the classroom may provide feelings of success. Such opportunities are provided in the local context. Harper (1993) also promoted internship programs. Through local tech-prep monies, the target school will have internship programs that started in 1994, but are expanding greatly for the 1995-6 school year (P. Farb, personal communication, May 23, 1995).

Marshall (1989) suggested a different way to approach improving self-concept by recognizing a wider range of talents and abilities. Although the term "multiple intelligences" is not always used directly, it is implied in many articles (Gentile & McMillan, 1992; Means & Knapp, 1991; Morin, 1991; Weaver, 1993). Students come to school from many different backgrounds that draw on a wide range of experiences; the school has to recognize a wider range of talents and abilities in order to motivate to learn. Escherman (1988) and Lamperes ((1994) became more specific by suggesting teachers must analyze or inventory each student's learning style. By recognizing each student's abilities, there should be growth not only in self-esteem, but in associating the classroom as a nurturing environment.

Chapman (1993) felt that many students are unmotivated because the school did not recognize their particular forms of intelligences. Chapman's title, If the Shoe Fits...: How to Develop Multiple Intelligences in the Classroom, creates an excellent mental picture.
If the school fits the student's learning style and (more importantly to Glasser) the student's needs, learning will occur. The student will be motivated by having their needs met (Armstrong, 1990; Glasser, 1990; Gough, 1987). By recognizing strengths, self-concept should improve, as well as student-teacher communication. When someone feels good about himself, positive interaction increases and so does a positive classroom climate (Sternberg, Okagaki and Jackson, 1990).

To teach to multiple intelligences, a variety of methods are needed. Reed and Johnson (1992) explored a wide range of media and models that can replace the traditional "chalk talks." New technology taps into more intelligences than the traditional classroom. Videotapes, for example, appeal to visual/spatial intelligences and musical/rhythmic intelligences. Computers can provide a chance for bodily/ kinesthetic learners to satisfy tactile needs (Armstrong, 1990). By appealing to more intelligences, motivation is more likely to occur; however, problems can arise. Teachers can overemphasize the tools rather than the learning; they can become focused on **things**. Instead of an endless repetition of worksheets, lectures, tests routine that dominates in some classrooms, the new rut is videos, worksheets, tests. Technology can be used to fill time. It can also lessen the amount of communication and interaction going on in the classroom as machines are the center of the class period. As Gentile and McMillan (1992) noted, the at-risk learner often feels unnoticed or invisible. Careful use of technology seems wise.

Among the positive uses of technology is the use of computers. Computers are used in remedial and supplemental programs for at-risk students (Slavin & Madden, 1989). Computers can provide individualized instruction and tutoring. Students that have problems expressing themselves on paper, often prefer using computers to do assignments. Using programs that check grammar and spelling can make written work much less threatening. Problems in motor skills are also less of a problem when using a keyboard rather than pencil or pen. Certainly, the physicist Stephen Hawke's use of technology can be an inspiration. Computers are a part of special education and resource room tools at the targeted high school.

The use of extrinsic rewards has once again resurfaced as a possible way to motivate (Bracey, 1994; Bower, 1994; Seal, 1993). Part of the frustration in education is that ideas seem to gain popular attention, then are found to be failures; years later the same idea that has not worked will be reborn in the frantic search for a new panacea for problems. Rewards have been found to extinguish desired behavior; they do not provide intrinsic motivation. Bracey (1994) provided the most concrete information on research's negative findings; he cited Alfie Kohn's Punished by Rewards as the final word on the subject.

The literature surveyed included two reassuring points about the student's own role in motivation and academic success. First, all motivation must come from within the student (Pardes, 1994). Secondly the student is responsible for their own behavior(Pigford, 1992). Students have their own learning styles and experiences that modify what any teacher, no matter how skillful, is trying to accomplish. Realistically plans will be met with both success and failure.

Project Outcomes and Solution Components

As a result of the use of strategies to increase motivation during the period of August through November of 1995, the targeted biology students will show a decrease in discipline referrals, absences and missing work as measured by teacher records; student surveys and journal entries will be used to provide insight into attitudes.

In order to accomplish the following the project objectives, the following processes are necessary:

1. Teacher materials and actions that foster motivation will be developed and utilized.

2. A series of cooperative learning activities that foster motivation and include multiple intelligence strategies will be developed.

3. Within the teacher lesson plans, time will be scheduled to include cooperative activities and to communicate student growth.

The following are the components to the solution:

1. Multiple intelligences will be discussed and a simple inventory will be administered.

2. Students will choose their own two person base groups that will meet once a week for varying amounts of time from fifteen minutes to full period in order to complete the assigned laboratory work. The underlying purpose of these groups is not only to complete assigned work, but to provide support for the group members.

3. Students will be randomly assigned to three person cooperative task groups at least once a week for fifteen to thirty minutes to work on shared problem solving that will emphasize the use of graphic organizers. These groups will be followed with either a discussion of a designated social skill being worked on that week or a metacognitive activity related to the group assignment.

4. Weekly at the end of each unit, students will write in their journals.

5. Lesson plans will be adapted to explore the different intelligences and make students aware of the type of intelligence being used. To expand on this, hands on laboratory work will be used primarily to tap the various intelligences. Combining ideas from West (1990) and Armstrong (1990), lab work that is done in cooperative groups draws on interpersonal intelligence; the hands on approach uses the bodily/kinesthetic intelligence plus the visual aspects draw out visual/ spatial intelligence; while the questions and conclusions that the lab should answer draw out logical/mathematical skills plus the write up of the information follows up verbal/linguistic skills. If music is played in the background, musical/rhythmic is enhanced (Armstrong, 1990). After the lab is complete, the weekly journaling provides the time for reflection for intrapersonal intelligences.

Action Plan for the Intervention

The action plan is presented in outline form by five day weeks rather than specific dates because, as Amspaugh noted (1993), a teacher's day is filled with a variety of interruptions. In the target high school such interruptions include announcements, special assemblies, pep rallies, and class meetings to mention just a few. The schedule covers the time frame that begins with August 28 as week one (since this is the first day with students) and ends on November 22 with week thirteen. Because of the many interruptions already mentioned, this will probably be modified to end with the work covered in week twelve. The action plan follows:

Week 1 Topic I: Introductory Work on Cells and Biology, 3 week unit

A. Class discussion of multiple intelligences and administer inventory

B. Task groups will do "Can You Zooley?"

follow-up: P/M/I on interpersonal intelligence

C. Base group uses graphic organizer to sequence use of microscope

follow-up: P/M/I on verbal/linguistic intelligences

Week 2

D. Base group does chromosome lab

follow-up: Mrs. Potter's questions

E. Task groups define three cell parts using portmanteau technique

follow-up: P/M/I on portmanteau and visual/spatial intelligence

F. six person task groups develop "Chromosome Dance" to demonstrate mitosis

follow-up: P/M/I on bodily/kinesthetic intelligence

Week 3

G. Base group does mitosis lab

follow-up: P/M/I of music in lab and musical/rhythmic intelligence

H. Task group does classification exercise

follow-up: P/M/I on logical/mathematical intelligences

I. Students write in their journals

follow-up: P/M/I on intrapersonal intelligences

Week 4 Topic II: Sponges and Jellyfish Unit: Zoology

A. Base group does sponge and jellyfish lab

follow-up: class develops T-chart on group work since

the next 3 weeks focus on basic social skills.

Task group will do Venn diagram comparing sponges and jellyfish; one member of each group will do observer check list

follow-up: discuss observations in class

C. Students make journal entry

Week 5 Topic III: Flatworms and Roundworms

A. Base group does flat and roundworm lab

B. Task group uses Venn diagram to compare flat and roundworm; third person in group is observer

follow-up: discuss observations in class

C. Students write in journals

Week 6 Topic IV: Earthworms

A. Base group does earthworm lab

B. Task group does Venn diagram comparing microscope with dissection labs; third person in group is observer

follow-up: discuss observations

C. Students write in journals

Week 7: Topic V: Mollusks

A. Base group does clam lab

B. Task group develops class rules for group work based on observations

C. Students write in journals

Week 8: Topic VI: Crustaceans

A. Base group does crayfish lab

B. Task group designs a rubric to grade journal for next week; journal grade will replace the lowest test score of quarter

follow-up: discuss P/M of grading oneself

C. Students write in journals

Week 9: Topic VII: Echinoderms

A. Base group does starfish lab

B. Task group does "Create a Creature" exercise

follow-up: what kind of intelligences are used in exercise?

C. Students use rubric to evaluate their journals

Week 10: Topic VIII: Fish

A. Base group does perch lab

B. Task group does Venn diagram comparing vertebrates and invertebrates

follow-up: what intelligences does a Venn diagram use?

C. Students write in journals

Week 11 Topic IX: Amphibians

A. Base group does salamander lab

B. Task group does people search for review

follow-up: P/M/I on people search

C. Students write in journals

Week 12 Topic X: Reptiles

A. Base group does reptile lab

B. Task group writes three questions for reptile test

follow-up: K/W/L on writing good questions (3 story intellect will be introduced)

C. Students write in journals

Week 13 Topic XI: Birds

A. Base group does feather lab

B. Task group does bird worksheet

C. Students write in journals

follow-up: using worksheet, what kinds of test questions could be developed?

C. Students write in journals

Methods of Assessment

In order to try to determine the effects of the intervention, teacher records will be kept on attendance, missing work and discipline referrals for the targeted at-risk students. This information will be supplemented by the journals kept. Since journal entries will be made weekly, they will provide insight into changes in student attitudes. A follow-up survey will be given at the end of the intervention that will also provide a chance to assess changes in student attitudes.

Chapter 4

PROJECT RESULTS

Historical Description of Intervention

The objective of this project was to increase motivation in at-risk students. The implementation of cooperative learning activities, the incorporation of lessons designed for multiple intelligences and student journaling to further communication were selected to affect the desires changes. The strategies were chosen to try to create a positive classroom climate that would foster motivation.

Time played the greatest role in altering the original action plan. The high school setting was especially vulnerable to this problem because bells were used to start and end each class period. The action plan covered thirteen weeks; the intervention ended with week eleven. Changes were made to accomodate time. It was interesting to note that students journals often commented on needing more time; students, too, felt frustrated by the many conflicting demands on their time.

Cooperative learning was used to help increase motivation through working together for common goals. Base groups were established at the beginning of the second week of class for sharing lab work. These base groups were maintained throughtout the intervention for the targeted students although there was a small number (four groups) of other groups that changed early in the intervention as differences arose. The average time spent in base groups increased to two days in response to student needs.

The randomly selected task groups spent less time together than was planned; this was to provide the extra time needed for base groups. The

task groups spent at least ten minutes together to solve common problems. In weeks five through seven, the groups were assigned questions for review, using the jigsaw technique, rather than using graphic organizers. The last two weeks of the intervention, the task groups were used to write their own questions for their tests; this was in response to negative feelings communicated in the journals about the difficulty of class tests.

After introducing multiple intelligences activities, the action plan called for stressing one social skill per week in order to create individual class rules. To provide a framework for appropriate behavior, sample social skills from Bellanca and Fogarty (1991) were posted in the classroom. Students at the targeted grade level were experienced in cooperative learning. It soon became apparent that there was no need to do more than review needed social skills. Problems, as they arose, also needed the immediate referral to these guidelines rather than waiting for group processing. The posted social skills became incorporated into the class rather than writing a new set of guidelines.

The multiple intelligence inventory was administered the first week of school. A general discussion revealed that most students were generally familar with the idea due to the instruction of former teachers. The biggest dissappoint in the intervention was the group's failure to connect tasks with the different forms of intelligences. One reason for the failure might have been the terminology, such as "verbal/linguistic." In hindsight, the researcher could have simplified the term; for example, "language" would have conveyed the meaning for verbal/ linguistic more directly. The more formal terms were used with advance biology students; they assimilated the terms easily. The older students were the appropriate age.

Another reason that the targeted students did not connect the task to the intelligences was due to time. Metacognitive processing was intended to be used at the end of each type of task. Since bells ring on schedules set outside the classroom, metagognitive processing was the area where the research design failed. Only four of the seven intelligences were processed. As soon as the researcher recognized the problem, a basic change was implemented. Processing that was not done in class was used as the topic for the journals for that week.

Journaling began the fourth week of the intervention, one week later than planned. Although students expressed doubts prior to the implementation, no large problems were experienced once journaling had become a regular part of the class. The journals were used for closure to a week's activities; this appeared to be natural timing. Since time had interfered with metacognition for the classroom as a whole, the journal filled this need. For example, observers recorded what they had seen in the task groups in the journal; the group reflected on their progress using "Mrs. Potter's Questions" as a guide (Bellanca & Fogarty, 1991).

Since journals were new to the group as a whole, there was a change in the grading rubric. The rubric was used to grade student growth and achievement during the first quarter. Students then wrote their own second quarter goal. They used their journal entries to evaluate their progress in achieving that goal. Once the targeted students became used to writing and reflecting, they were better able to assess their own growth.

Graphic organizers were incorporated into the lessons to work on problem solving skills. Sequence charts, T charts, Plus/Minus/Interesting (P/M/I) and Venn diagrams were the organizers used. The sequence chart was the only real failure. Either the task was too easy or not appropriate for the group;

the students were not comfortable with this organizer even though advanced students used it often by request.

Presentation and Analysis of Results

In order to assess the intervention strategies used to motivate at-risk students, teacher records were kept on attendance, missing work and discipline referrals for the targeted students. This information was supplemented by comparing current grades and grade point averages (GPA) to

Table 3

Student Attendance and Achievement

Comparing Pre- and Post-intervention

Student	Number of Days Absent		GPA		Science Grades	
	pre	post	pre	post	Prev. 1st Sem.	Qtr. 1
1	60	1	N/A	2.28	F	C-
2	1.5	1	2.38	2.57	B*	D-
3	20	Changed classes	1.54	Changed classes	C+	Changed classes
4	1.5	.5	2.46	2.5	C	C
5	8.5	11	1.91	2.0	C-	C
6	8	5	.83	1.66	D	B-
7	17.5	5	2.36	2.33	B*	D+
8	9	3.5	1.91	1.0	C	F
9	3	0	1.45	2.83	D-	C
10	16.5	4	1.00	1.14	F	F
11	4	2	2.08	2.83	B-	C
School Average	11.7	3	2.00	2.0	C	C
Median	8.5	3	1.91	2.3	C	C

* From self-contained classroom

the pre-intervention data collected and presented in chapter two. A post-intervention survey was taken. Beginning the fourth week of the intervention, journals were kept by the students and read each week by the researcher.

Absences showed improvement during the intervention period (table three). As discussed in chapter two, four out of ten at-risk students had two or more times the number of absences than the school average. During the implementation period, the median for the target group was three absences, which was the same as all students in the targeted school. Only one at-risk student had been absent more than twice the average number of days. This represented excellent improvement in attendance, which indicated increased motivation to attend.

Prior to the intervention, nine out of the ten at-risk students had been identified as having problems turning in homework according to the teacher survey (appendix B). Table four showed that missing work was not a problem

Table 4
Comparing All Students Missing & Late Assignments
to the target At-risk Students

		Sept.	Oct.	Nov.
Missing Work	All Students (N=72)	6	6	6
	At-risk Students (N=10)	0	0	1
Late Assignments	All Students (N=72)	36	11	11
	At-risk Students (N=10)	15	0	5

during the intervention. Only one student had failed to hand in an assignment. This single omission occurred in November at the arbitrarily set cut off date.

To look more closely at problems with homework, another set of data was gathered. When a student paper was turned in late, the grade recorded was framed in an "L." As table four shows, late work declined noticably after September and reached a plateau. Missing work declined to one-third the original amount for all students during the second month of the intervention. This was an unexpected benefit of the intervention strategies. The at-risk students' missing work showed the same general trend; November results were one-third the original number of late papers. November's results were higher, however, than October's for the at-risk population. The end of October represented the end of the first grading period. Since homework has been a constant problem, the at-risk students were aware of a need for improvement; they appeared to be motivated to turn all work in on time for the grading period.

There was another unexpected benefit to the intervention. Eligibility has always been required for participation in extracurricular activities; teachers have had to turn in weekly eligibility lists for students that have earned failing grades. The targeted school has modified that requirement to include all students earning less than a "C." At the beginning of the intervention, the researcher had 52 names on the first week's eligibility list for all six classes taught; in the past, the list had averaged 40 to 50 names. By the end of the intervention, the list contained only eight names for all six classes. Since the same strategies were used in all classes for consistency, increased student motivation may have affected success.

Looking at the median grades in the pre- versus post-intervention period, there was no difference in the median grade (table 3). This, at first was disappointing; other factors, however, may have prevented easy comparison. Two of the ten at-risk students had not been in regular classes prior to the intervention; the two students were in self-contained classrooms where a modified science curriclum was taught. Both students had just been moved to regular science instruction when the intervention began. Both were able to make the transition to regular science class by passing biology with a "D." Since removal from regular classes occurred due to an inability to deal with regular classes, traditional teaching methods and repeated academic failures, their first grades were better than the grades that they had previously earned. In fact, one of the two had earned a "C" for the next midterm that occurred one week after the cut off date for the intervention. The targeted classes had provided room for growth.

Table three data three compared GPA's for the at-risk students before and during the intervention. Seven out of ten at-risk students improved their GPA's; the total improvement was an increase of 0.26. The median GPA reached 2.3, which was above average. The at-risk students had been able to achieve more than average academic success at this time.

Discipline referrals were checked for the intervention period; there were absolutely none in the at-risk students (C. Finch & D. Zimmerman, personal communication, November 22, 1995). According to the teacher survey (appendix B), three of the ten students had been known for having discipline problems. The school average was 19 percent for the more serious classification, suspensions (Year End Report, 1995). This data suggested a real improvement in attitude and motivation.

The post-intervention survey showed hardly any differences in attitude; all changes were less than ten percent (appendix C). Since discipline and attendence had shown progress, these findings were disappointing. The information may have represent problems in assessing attitudes; attitudes are hard to measure and hard for the targeted group to express. To summarize the information that was obtained, the larger positive increases were in goals being set, feelings toward teachers, and wanting to attend school. These reflected on positive school climate. The larger negative drops were in feelings towards homework, achieving grades, and establishing a work space. Since the first survey was taken on the opening day of school, the drop could be attributed to the difference between intentions and the reality of school. At-risk students have not achieved must success in the past, nor do they view school as a place where they felt good about themselves. Problems in self-concept lingered; in fact the reasearch discussed in chapter three emphasized this was a special area for concern.

The journals were the the high spot in the strategies. Despite pre-intervention doubts, ninety percent of all journals during the last week showed positive attitudes. The researcher realized too late that no check list or other method of assessment had been developed to analyze the results of journaling. Despite this flaw in methodology, a simple log was kept during the last week of the intervention to provide some guide to assessment. Of the 59 journals written in, only six had negative comments. (The six negative comments concerned one student who did not want to journal, another who complained about other students' attitudes and four complained who were worried about the latest test being too hard.) Although a weekly log would have made the results clearer, a general trend was seen. Students expressed themselves in their journals freely; communication was established that

benefitted the class climate. For example, one parent came to parent conferences just to discuss journals. Their child had figured their grade to be an A, but was told that they were getting a B+; the student wrote down this difference in their journal, so the teacher-researcher would recalculate the grade (the student, by the way, was correct). The parent's point was the lines of communication were so well established that the student trusted the researcher to read and act on the information. Such attitude improvements helped provide for motivation.

In looking back through the data collected, the intervention had some mixed results, such as in actual grades and survey results. The overall result of the strategies used resulted in an increase in motivation demonstrated by the decrease in discipline referrals and missing assignments plus the increase in attendance and GPA's.

Conclusions and Recommendations

In looking through the data collected, the strategies used met with some success. Discipline problems, missing work, GPA's and attendance improved; the data indicated that the students had increased motivation. The increased motivation affected all classes taught, not just the targeted students, which was an unexpected benefit. Science grades and survey results did not change for the targeted students. After being immersed in the problem of implementing specific strategies for thirteen weeks, it was hard to objectively analyze the results in order to make recommendations. It was necessary to question which results occurred due to the methods employed and which strategies needed changing to improve the efficacy.

One question that needed to be addressed was how much of the results were due to the specific methods employed? The improved GPA's indicated

overall improvement rather than improvement in a single classroom. In chapter one the local context was discussed. The targeted school provided a support system for at-risk students that placed them in special classes one period a day for extra help. The smaller classroom and individualized attention had a positive impact; however, the at-risk students had to deal with regular classes six of seven periods each and every day. Students had to want to attend for a full day; the improved attendance indicated that at-risk students had increased positive feelings for school in general and felt motivated to attend. The absence of discipline problems for the targeted students supported this conclusion. The support system complemented the intervention strategies.

Self-fulfilling prophecy contributed to the positive results. The targeted students realized that the researcher was trying to create a positive classroom attitude and the targeted students responded to that atmosphere. The goal of the intervention strategies was to improve student attitudes; high expectations and caring worked as did the specific teaching strategies employed.

During the intervention, some problems became apparent. To begin with, the very specific time frame for the research created its own problems. Most action researchers have faced similar constraints because they are working in an actual classroom rather than an contrived setting. Intervention strategies should be started from the beginning of the school year for consistency in the approach used; fewer strategies needed to be used at the start so that researchers had more time to critique their own work. The researcher, not the students, needed more time to assess what was happening and how to improve any problem areas. For example, the researcher failed to note that no specific way to evaluate journals was in place until late into the planned time.

Multiple intelligence theory and its application in the classroom had much to recommend itself. Making students aware of difference created a climate of acceptance for differences. Using lessons aimed at various types of intelligence helped all students. The fact that there was not a single "right way" to do tasks, contributed to a less stressful environment. Students appreciated having variety in their work. On the other hand, the targeted age group, sophomores, responded poorly to the language of multiple intelligence theory. The introduction of the specific terms for each intelligence was a mistake. Students would have profited more from reflection after lesson. Simplifying the terminology also would have helped. For example, "intrapersonal intelligence" was hard for the targeted students to distinguish from the very similar sounding "interpersonal." Too much information was given at once through direct instruction. Although multiple intelligences lessons will be kept, the method of presentation will change.

Cooperative learning, both in base groups and task groups, was successful. Student journals confirmed the positive effects of cooperative learning on all students' attitudes. Working together was perceived as less threatening. Asking other students for help became a normal part of class. Since everyone asked for and got help, at-risk students did not feel different. During the entire thirteen week period, only one student ever asked **not** to work in groups. The growth in positive attitudes that could increase motivation was seen in little missing work, fewer late papers and more days attended. Discipline problems ceased to exist for the at-risk students. They were part of a classroom team that worked together.

Journaling was the greatest success. Two schools of thought exist on journaling: letting the writing be a matter of choice versus the use of a stem statement. For the targeted age group, self-guided writing was found

not to be as effective. After three weeks, the student writings had decreased to only a sentence or two per student. When a lead-in question was used, the quality and quantity of writing increased. Communication represents an exchange of ideas; the students needed to have focus. This could be a specific response to the demanding high school curriculum. Although this limited some creativity, it allowed the students and researchers to share and understand each other better.

Motivation, an attitude, remains a difficult area in which to work. The specific intervention strategies created a positive classroom climate in which at-risk students were able to achieve average grades through increased motivation. Cooperative learning, multiple intelligence lessons and journal made this possible for the at-risk students. Moreover, all students in the researcher's classes benefitted from finding school a place where they could succeed.

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Appendix

Appendix A

Student Survey Data

1. I really want to do well in school. (N=68)

strongly agree	somewhat agree	seldom agree	disagree
45 (66%)	21 (31%)	2 (3%)	0 (0%)

2. Doing my homework is: (N=67)

very important	somewhat important	seldom important	never important
31 (46%)	32 (48%)	4 (6%)	0 (0%)

3. I have a place to do my homework: (N=68)

always	most of the time	seldom	never
31 (46%)	27 (40%)	10 (15%)	0 (0%)

4. My parents feel that school is: (N=66)

very important	somewhat important	of little importance	not important
58 (88%)	8 (12%)	0 (0%)	0 (0%)

5. My classes are usually: (N=67)

interesting	somewhat interesting	somewhat boring	boring
11 (16%)	40 (60%)	13 (19%)	3 (4%)

6. I have a goal for this year.

	Yes	No
(N=66)	57 (86%)	9 (14%)

7. I want to attend school: (N=70)

every day unless sick	often	seldom	only when I have to
35 (50%)	25 (36%)	6 (9%)	4 (6%)

8. About my teachers, I: (N=59)

almost always like them	usually like them	sometimes like them	seldom like them
11 (19%)	35 (59%)	13 (22%)	0 (0%)

9. My grade is: (N=66)

very important to me	usually important to me	somewhat impotamt	unimportant to me
41 (62%)	21 (32%)	4 (6%)	0 (0%)

10. I believe that I can do well in school. (N=66)

Yes	No
66 (100%)	0 (0%)

Appendix B

Teacher Survey Data

Question one that was asked was "Is homework a problem for the student?" "Problem" was defined as not having ninety percent or more of their work done (Canfield, 1990). Canfield's guideline was modified to include ninety percent on time since late papers are penalized. Although penalties vary from teacher to teacher in the targeted school, late work will lower student grades.

Question two that was asked was "Does the student have problems with behavior?" "Problem" here focused on whether has had to be removed from class(es) since this results in missing work and in receiving behavior referrals.

The results of the survey are:

Table 5

Student	Homework Problem	Behavior Problem
1	yes	yes
2	yes	no
3	yes	no
4	yes	yes
5	yes	no
6	yes	no
7	no	no
8	yes	yes
9	yes	no
10	yes	no
11	yes	no

Appendix C

Student Survey Data

1. I really want to do well in school. (N=68) N=61

stronlgy agree		somewhat agree		seldom agree		disagree	
pre	post	pre	post	pre	post	pre	post
45=66%	46=75%	21=31%	13=21%	2=3%	1=2%	0=0%	1=2%

2. Doing my homework is: (N=67) N=60

very important		somewhat important		seldom important		never important	
pre	post	pre	post	pre	post	pre	post
31=46%	26=43%	32=48%	25=42%	4=6%	7=12%	0=0%	2=3%

3. I have a place to do my homework: (N=68) N=60

always		most of the time		seldom		never	
pre	post	pre	post	pre	post	pre	post
31=46%	26=43%	27=40%	25=42%	10=15%	7=12%	0=0%	2=3%

4. My parents fell that school is: (N=66) N=59

very important		somewhat important		of little importance		not important	
pre	post	pre	post	pre	post	pre	post
58=88%	53=90%	8=12%	5=8%	0=0%	0=0%	0=0%	1=2%

5. My classes are usually: (N=67) N=60

interesting		somewhat interesting		somewhat boring		boring	
pre	post	pre	post	pre	post	pre	post
11=16%	8=13%	40=60%	38=63%	13=19%	12=20%	3=4%	2=3%

6. I have a goal for this year. (N=66)

Yes		No	
57=86%	58=97%	9=14%	2=3%

7. I want to attend school: (N=70) N=60

every day unless sick		often		seldom		only when I have to	
pre	post	pre	post	pre	post	pre	post
35=50%	33=35%	25=36%	21=35%	6=9%	5=8%	4=6%	1=2%

8. About my teachers, I: (N=59) N=60

almost always like them		usually like them		sometimes like them		seldom like them	
pre	post	pre	post	pre	post	pre	post
11=19%	15=25%	35=59%	36=60%	13=22%	8=13%	0=0%	1=2%

9. My grade is: (N=66) N=60

very important to me		usually important to me		somewhat important to me		unimportant to me	
pre	post	pre	post	pre	post	pre	post
41=62%	36=60%	21=32%	21=35%	4=6%	2=3%	0=0%	1=2%

10. I believe that I can do well in school. (N=66)

Yes		No	
66=100%	59=95%	0=0%	3=5%